

# Journal of the Royal Society of Arts

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VOL. CI

## VISIT OF H.R.H. THE PRESIDENT

His Royal Highness the Duke of Edinburgh, President of the Society, has graciously expressed his intention to be present at the Opening Meeting of the 200th Session on Wednesday afternoon, 18th November, when the Right Honourable the Earl of Radnor, Chairman of Council, will deliver his Inaugural Address. The proceedings will begin at 2.30 p.m.

Special admission tickets will be required for the meeting, and, with the object of enabling as many Fellows as possible to attend, only one ticket will be issued to each Fellow applying. Should it not be possible to find seats for all of them in the Lecture Hall, arrangements will be made in the Library for an overflow meeting to which the proceedings will be relayed, and which it is hoped that the President will visit on their conclusion.

Applications will be dealt with in the order in which they are received, and the Lecture Hall will be filled first. Tickets will be issued early in November.

## THOMAS GRAY MEMORIAL TRUST

### AWARD OF PRIZES FOR MERCHANT NAVY TRAINING BOARD EXAMINATIONS

The names of the winners of the medals and prizes offered this year under the Thomas Gray Memorial Trust to Merchant Navy apprentices and cadets obtaining the first five places in each section of the Annual Examinations of the Merchant Navy Training Board have now been announced and are set out below. These examinations are divided into three sections, for apprentices and cadets in their first, second and third years of apprenticeship, and the following medals and prizes have been awarded: in the third-year examinations, five silver medals; in the second-year examinations, five bronze medals; and in the first-year examinations, five telescopes.

#### *Third Year*

- R. Reid (Shaw Savill Line)
- L. C. Sutherland (Anchor Line, Ltd.)
- B. D. Thorne (Royal Mail Lines, Ltd.)
- G. S. Varney (Royal Mail Lines, Ltd.)
- J. M. Woollen (Peninsular & Oriental Steam Navigation Co.)

*Second Year*

J. A. Chester (John Holt Line, Ltd.)  
 S. S. Cutlack (Andrew Weir Shipping & Trading Co., Ltd.)  
 M. J. Dove (The Hain Steamship Co., Ltd.)  
 D. Eggleton (Prince Line, Ltd.)  
 A. S. Thomson (Charles Salvesen & Co.)

*First Year*

G. Bell (The Anglo-Saxon Petroleum Co., Ltd.)  
 R. Cooper (Walter Runciman & Co., Ltd.)  
 P. F. Glass (British India Steam Navigation Co., Ltd.)  
 P. F. Hogg (Shaw Savill Line)  
 D. T. Hyde (The Anglo-Saxon Petroleum Co., Ltd.)

*MEETING OF COUNCIL*

A meeting of Council was held on Monday, 12th October, 1953. Present: The Earl of Radnor (in the chair); Mr. F. H. Andrews; Sir Alfred Bosson; Sir Frank Brown; Sir Edward Crowe; Mr. P. A. Le Neve Foster; Sir Ernest Goodale; Mr. A. C. Hartley; Dr. R. W. Holland; Sir Harry Lindsay; Mr. F. A. Mercer; Mr. O. P. Milne; Sir William Ogg; Mr. E. M. Rich; Professor A. E. Richardson; Mr. A. R. N. Roberts; Sir Andrew Rowell; Mr. E. Munro Runtz; Mr. Gordon Russell; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Sir John Simonsen; Sir Stephen Tallents; Mr. William Will; Sir Griffith Williams; Mr. J. G. Wilson; Sir John Woodhead, and Miss Anna Zinkeisen; with Mr. K. W. Luckhurst (Secretary) and Mr. R. V. C. Cleveland-Stevens (Assistant Secretary).

*ELECTIONS*

The following candidates, whose applications had been received since July, were duly elected Fellows of the Society:

Ashby, James Stanley, Hounslow, Middx.  
 Bain, John, A.M.I.Mech.E., Harrow, Middx.  
 Baines, George Grenfell, A.R.I.B.A., Preston, Lancs.  
 Bottomley, Derek Stanley, A.R.I.B.A., Huddersfield, Yorks.  
 Burton, Professor Alan Chadburn, M.B.E., B.Sc., M.A., Ph.D., F.R.S.C.,  
 London, Ontario, Canada.  
 Byrne, F. Oliver, Karachi, Pakistan.  
 Calder, James, C.M.G., M.A., Nelson, New Zealand.  
 Collins, William Hope, Glasgow.  
 Conn, Professor Hugh Gordon, O.B.E., M.S., B.Sc., Kingston, Ontario,  
 Canada.  
 Cook, Jack Sydney, A.C.I.S., Gillingham, Kent.  
 Craze, Romilly Bernard, F.R.I.B.A., London.  
 Dalal, Manockji Nadirshaw, M.I.C.E., Bombay, India.  
 Deschampsneufs, Henry Pierre Bernard, B.A., London.  
 Devonshire, His Grace the Duke of, M.C., Bakewell, Derbys.  
 Diamond, George le Boutillier, C.B.E., M.I.Mech.E., Shorne, Kent.

- Dick, Russell Gladstone, F.R.I.C.S., Wellington, New Zealand.  
Durocher-Yvon, Felix, M.B.E., Lusaka, Northern Rhodesia.  
Durrant, Roy Turner, London.  
Ephson, Isaac Sergius, B.A., B.Com., London.  
Fairhead, Francis Leslie, Ilford, Essex.  
Falle, Raymond, St. Helier, Jersey.  
Farman, Albert Lawrence, F.R.I.B.A., London.  
Foster, William Archer, M.P.S., Carnforth, Lancs.  
Fox, John, M.I.Mech.E., Hove, Sussex.  
Frank, William Glazebrook, London.  
Gilles, Dennis Cyril, B.Sc., Ph.D., A.R.C.S., Sidcup, Kent.  
Gladwell, Rodney, London.  
Gombrich, Professor Ernst Hans Josef, M.A., Ph.D., London.  
Gooden, Stephen Frederick, C.B.E., R.A., Chesham Bois, Bucks.  
Goss, George Charles Louis, M.Sc., Ph.D., London.  
Gostt, Arthur William, Enfield, Middx.  
Griffiths-Elsden, Major Walter, Watford, Herts.  
Hard, John Frederick, B.Sc., Baldock, Herts.  
Hart, Ivor Blashka, O.B.E., Ph.D., B.Sc., Carshalton Beeches, Surrey.  
Harvey, Lionel Victor, Folkestone, Kent.  
Hawes, Stanley Gilbert, Chatswood, N.S.W., Australia.  
Head, Norman Albert, Parkstone, Dorset.  
Hodgson, Arthur Matthew, A.M.I.E.E., New Malden, Surrey.  
Ing, Harold Vivian, Dartmouth, Devon.  
Jach, Joseph, M.Sc., Cape Town, South Africa.  
Jones, Henry Reginald Lionel, Upminster, Essex.  
Josten, Conrad Hermann, M.A., Oxford.  
Kemp, Roy, Dover, Kent.  
Kendall, Stanley Bennett, London.  
Kilburn, John Aaron, Manchester.  
Laycock, Douglas, Mossley, Manchester.  
Lunnon, Robert, London.  
McDermott, John Theodore, J.P., Braxton, N.S.W., Australia.  
McHugo, Christopher William, F.R.I.C., London.  
Maclean, Robert Alexander, C.A., Houston, Renfrewshire.  
Master, Alfred James Randall, M.B.E., Nairobi, Kenya.  
Meyersberg, Heinz, Dr. Ing., Chorleywood, Herts.  
Moore-Guggisberg, Lady Decima, C.B.E., London.  
Mosley, Zack Terrell, Stuart, Florida, U.S.A.  
Mounfield, James Denis, M.Sc., Ph.D., F.R.I.C., London.  
Nadel, Professor Stephen Frederick, D.Phil., Ph.D., Canberra, Australia.  
Newnham, George Osborn, B.Com., Port Elizabeth, South Africa.  
Packer, Douglas Frank Hewson, C.B.E., Sydney, N.S.W., Australia.  
Paddock, Ewing Munro, London.  
Palmer, Arthur Montague Frank, M.P., A.M.I.E.E., London.  
Perrottet, George David, Sydney, N.S.W., Australia.  
Perry, Alan Arnott, Sydney, N.S.W., Australia.  
Pilton, David Claringbold, Croydon, Surrey.  
Redhead, Robert Frederick, A.T.D., Lancaster, Lancs.  
Riddle, Oscar, Ph.D., LL.D., Plant City, Florida, U.S.A.  
Rivier, Louis Charles, Method, Yverdon, Switzerland.  
Roulston, Professor Ellis Newton, B.A., Sackville, New Brunswick, Canada.  
Savage, Major John Buckingham Stafford, T.D., London.  
Simmons, Ernest Bernard, Q.C., Curepipe, Mauritius.

Singh, Kanwar Mohinderpal, B.Sc., New Delhi, India.  
Smith, Rupert Arthur William, London.  
Strathmore and Kinghorne, The Right Hon. the Earl of, Angus.  
Svendsen, Professor Kester, M.A., Ph.D., Norman, Oklahoma, U.S.A.  
Tasker, Edward George, Barnsley, Yorks.  
Tempest, Geoffrey Harold, Leeds, Yorks.  
Todd, Mrs. Edith Jane, Bury St. Edmunds, Suffolk.  
Townshend of Raynham, The Most Hon. the Marquis, D.L., Fakenham,  
Norfolk.  
Wadsworth, George Wade, B.Sc., A.M.I.E.E., Kingston Hill, Surrey.  
Wansbrough, George, M.A., C.I.E.E., Basingstoke, Hants.  
Ward, Lt.-Col. Eric, T.D., M.I.Mech.E., Bristol.  
Willcocks, Conrad Birdwood, F.S.A., F.R.I.B.A., Reading, Berks.  
Williams, Bradford, A.B., M.L.A., Needham, Massachusetts, U.S.A.  
Wilson, Norman Fenwick, Sydney, N.S.W., Australia.  
Wren, Walter Thomas, London.  
Whiteside, Roland Darnell, Surbiton, Surrey.

The following candidates were duly elected Associate Members of the Society:

Clarke, James, Streetly, Staffs. (Examinations Silver Medallist).  
Rock, Miss Isabella Easton, Ballymena, Co. Antrim, Northern Ireland.  
(Examinations Silver Medallist).

Admitted under Bye-Law 66:

Roffey Park Institute, Horsham, Sussex.

#### PROGRAMME OF LECTURES

The programme of lectures for the 200th Session, so far arranged by the Papers and Medals and Commonwealth Committees, was approved.

#### BICENTENARY CELEBRATIONS

Further details were settled regarding the celebration of the Society's bicentenary next year.

#### EXAMINATIONS COMMITTEE

Dr. A. J. McIntosh, Principal of the City of London College, was co-opted a member of the Examinations Committee.

#### TRUST FUNDS

Proposals for the offer of prizes under several of the Society's trust funds were approved. (Details will be announced in the next issue of the *Journal*.)

#### OTHER BUSINESS

A quantity of formal and financial business was transacted.

# MAKING FILMS IN AND FOR THE COLONIES

*A paper by*

W. SELLERS, O.B.E.

*Producer and Head of the Colonial Film Unit, read to the  
Commonwealth Section of the Society, on Tuesday, 24th  
March, 1953, with the Honble. Anthony Asquith in the Chair*

THE CHAIRMAN: Whenever I am asked to take the chair at a meeting, I always bear in mind the terrible cautionary tale which is told of a certain American professor who took the chair at one of Bertrand Russell's lectures. After the usual preliminary of saying that he would only detain the audience for one minute, he spoke for three-quarters of an hour, after which he said, 'Now Lord Russell will give us his address'. Whereupon Lord Russell got up and said, 'The Ritz Hotel', and sat down. I promise you I shall not be long enough to provoke Mr. Sellers into giving us his exact address, but I would, before I ask him to address you, like to tell those of you who do not already know a few things about him.

He has been head of the Colonial Film Unit since 1939, and in these thirteen years he has caused it to fulfil the one purpose for which he wished it to be founded, namely to help to raise the standard of living, of health, of education in all our Colonial territories.

For twenty years he was a propaganda officer in the Colonial Services in Nigeria, and there he tried hundreds of ways in which to find the best way of conveying to the people what he had to say about health, education, standards of living, agriculture, and so forth. Then in 1926 he started making films, and he found them the most direct, the most profitable, and the easiest way of conveying those ideas to the people concerned. In 1939 he was seconded home to the Colonial Office to organize the production of educational films for Colonial territories, and for the projection of Britain to the Colonial peoples. This led to the establishment of the Colonial Film Unit with its own premises, its own unit and its own personnel.

The Ministry of Information, at that time, were a little doubtful, in fact, a little sticky about it. They felt the whole idea was too ambitious, because Mr. Sellers' aim was that ultimately the Africans should make films for themselves in their own country. The only person, or practically the only person, who did not doubt was Mr. Sellers himself, and it was this burning faith in the possibility of doing that which led to its ultimate success.

I should perhaps, in parenthesis, say that in 1937 Mr. Sellers was made an M.B.E. for his services, and, in the last Birthday Honours, an O.B.E., but I have a feeling that much as he values those honours, the thing he values most is the fact that he has succeeded in the purpose of enabling the people to make their own films for themselves.

*The following paper, illustrated with films, was then read:*

## THE PAPER

We hear quite a lot these days about the economic and social conditions of the so-called backward and under-developed areas of the world. We are told

that three-quarters of the world's population are under-housed, underclothed, underfed and illiterate. Conditions may vary from continent to continent, and indeed from area to area, but common to all is the same sad depletion of human and physical resources.

The vicious circle is only too familiar to many lands: low food production; malnutrition; poverty; bad sanitation; apathy and ignorance; endemic diseases. Determined attacks are being made to breach the circle. The actual point of attack depends, of course, on local conditions and circumstances, and although the problem of illiteracy is vast indeed, much more than literacy campaigns are required.

Outside official circles very little is known of the contribution which films are making in the general education of the millions of illiterate people in the British Colonial Empire. The organization responsible for the development of this work is the Colonial Film Unit, which I was privileged to initiate in 1939 for the purpose of reporting the progress of the war to Colonial peoples, who both in man-power and material goods were to contribute substantially to the war effort.

For some twelve years prior to the war as an officer of the Nigerian Government I was permitted to carry out experimental work and develop the use of films in the rural areas of Nigeria and to evolve a special technique for the production of films for illiterate audiences. It is not always appreciated that viewing a film starts up quite a number of mental processes which with a trained mind function automatically but are nevertheless essential in order to appreciate and understand the various scenes which go to make a film. For example, to appreciate a black and white picture, tones of grey must be interpreted mentally into their respective natural colours, but this is comparatively simple compared with the problems arising from the limitations of the camera in recording scenes from real life.

Normal human vision is stereoscopic and covers an angle of roughly  $190^\circ$ , whereas the viewing angle of a normal movie camera is restricted to  $35^\circ$  and the pictures are non-stereoscopic. Looking at the cinema film therefore is similar to viewing an active real life scene through a short tube or pipe held to one eye. A trained mind will subconsciously accept this restriction and imagine it can see the missing parts of the picture which extend beyond the margin of the screen. If, for example, a cinema-minded person is shown a shot of the deck of an ocean going liner he will mentally see the surrounding water although it may not be included in the picture. Inexperienced illiterate people find great difficulty in making this important mental adjustment and this is one of the reasons why a special and restricted technique of film making is needed.

In 1926 during a serious outbreak of plague in Lagos I made a film for the purpose of encouraging the people to co-operate in reducing the rat population. After showing the film a number of times I became puzzled at the frequent reference to a chicken by the illiterate members of the audience. As far as I knew there was no chicken in the film, but after a careful search, sure enough, I found the chicken. I intended they should follow closely what the two men were doing,

but all they saw was the chicken and of course the film suffered because the continuity in the unfolding of the story was broken by the intruding chicken.

This and other similar experiences led to something quite important because later it became clear that many illiterate people do not use their eyes and look at the screen in quite the same way that educated people do. A person accustomed to looking at pictures will focus his eyes on a point a foot or two in front of the screen and in that way take in the picture as a whole. Illiterate people who may be quite unaccustomed to seeing pictures of any kind, still or moving, appear to fix their eyes flat on the surface of the screen and pin-point focus on to anything which has movement to the exclusion of everything else.

During these early days I spent much precious time producing semi-microscopic pictures of insects such as flies, lice and mosquitoes with the idea of explaining something of life cycle of certain insect borne diseases. In a film on malaria I included some very satisfying full close-ups of mosquitoes in the act of sucking blood, but the results when the film was shown were disastrous. The people became alarmed and enquired about the country where the people had to contend with such wicked looking monsters and remarked that they themselves were very fortunate to have mosquitoes which were quite small and comparatively harmless. The film proved a dismal failure and unfortunately added one more false idea to be stored in the minds of the people.

Despite all these enforced handicaps in our specialized kind of film making, we have to achieve exactly the same results as those desired by film makers working for literate audiences—a clear visual continuity, slow tempo and a smooth narrative flow resulting in a complete understanding by the audience of a message or idea communicated through the moving picture.

An extract from an early report from East Africa on the experiences and conclusions regarding suitable films for illiterate audiences reads:

In a recent consignment of films from London was a picture entitled 'Mr. English at Home', depicting in three reels the everyday life of an English artisan and his family. Officials who had viewed the film expected it to be a dreadful flop, but not at all! It can only be described as a striking success and its appeal is by no means limited to women and children. The explanation lies not so much in the fact that the standard of photography is extremely high, but that the film is slowly progressive. The characters are few and the scenes remain on the screen sufficiently long for Africans to appreciate their meaning. This film is certainly a lesson in the presentation of a subject to illiterate Africans through the medium of the cinema.

*The Lecturer here showed the opening sequences of the film 'Mr. English at Home'.*

Introducing the cinema to an audience who have never seen a moving picture is always full of interest. Experience has shown that the quickest way to explain what otherwise may be interpreted as the magic of the cinema is to allow new audiences to cut their teeth on material filmed in their own locality. The response to seeing moving pictures of their own chiefs and other local personalities, or scenes of themselves round the market place, is that the audience will react

immediately and call aloud 'But this is true—this is real', indicating their spontaneous acceptance of the cinema as a medium for recording and reproducing scenes from real life.

*Here the Lecturer showed a sequence from the film 'Machi Gaba'.*

There can be no question regarding the value of the familiar scene in the film education of illiterate people. The more familiar the background the greater the impact of the film upon the audience. Films must be presented in terms of life as the people know it and in a manner which will enable the people readily to identify themselves with the characters on the screen. Only then will they understand clearly the idea behind the film and emotional interest be aroused in the point. It was therefore unfortunate that during the war period the manpower situation made it impossible for film production units to be sent overseas, but the importance of the local scene was not overlooked and in 1941 what is known as our Raw Stock Scheme was introduced.

Under this scheme ten of our colonies were provided with 16mm. camera equipment and a free supply of raw stock. Local people exposed the film which was returned to us for processing, editing and titling, and later returned to the colonies with our detailed criticism. Technical articles intended to assist these local enthusiasts appeared regularly in our publication *Colonial Cinema*. In addition, courses of instruction were made available at our headquarters here in London and over forty colonial officers and others took advantage of this offer of training. Since 1941 a total of over 350 reels of films have been made in this way. The scheme is now being used effectively in providing an inexpensive method of film making for eleven of our smaller territories.

Immediately the war ended we were able to send out professional films units to the larger African territories, financed in the first place from Imperial funds, and later from the Colonial Development and Welfare Fund. Since 1946 twelve of these units have worked, on and off, in Nigeria, Gold Coast, Sierra Leone, Gambia, Kenya, Uganda, Tanganyika and Zanzibar, making educational films on a wide range of subjects suggested by the Governments themselves. Over 140 reels of educational films have been made by these units.

Language problems made the task of the European film technicians very difficult, as all instructions to the people taking part in a film had to pass through an interpreter. I warned all directors what to expect if they themselves mimed the action required—known as 'patterning'—but it was very tempting for directors when things went wrong to walk in front of the camera and go through the motions required. Invariably the African would behave unnaturally and imitate the action of the European.

*The Lecturer showed rushes from the film 'Village Development', illustrating what happened when a director tried to explain by action how he wanted a man to keep his head down during the filming of a medium close shot.*

If films for colonial people are to be successful they must be made in the local idiom and with a technique which follows closely on traditional story



telling lines. This requires an intimate knowledge of the people and their habits and customs which few apart from the people themselves possess. It soon became obvious that if successful films were to be made *for* the people and *with* the people they must be made *by* the people.

For the past five years the Colonial Film Unit has taken an active part in the training of Colonial people as film technicians. The first training school for Africans was started in West Africa in 1948. Six Africans were finally selected and the object of the course was to train them to take over the work of European technicians. The syllabus included both the practical and creative side of film making to a standard which would enable the students to attempt the production of simple films of an educational nature. After little more than six months' training the students were given opportunities to make films themselves unaided by their instructors. Good photography, wise choice of camera angles and distance, and good direction indicated that the patience and hard work of their instructors had not been in vain.

*Here the Lecturer showed a film made by the students.*

From West Africa the training school moved in 1949 to the West Indies where nine students from Trinidad, Barbados, British Guiana and Jamaica received training over a period of one year. Production Units staffed by these trainees have since been organized in each of the territories and later I propose to show you an example of the standard of work now being done in the West Indies. In 1950 the Film School moved again, this time to Cyprus, where nine students from Mauritius, Hong Kong, the Sudan and Cyprus were trained. A film made by these students will be projected at the conclusion of my talk. Training at our headquarters in London here is going on all the time and provides for practical and refresher courses in the various techniques of filmcraft, film strip production and still photography. By the end of 1952 over seventy people from the Colonies had received instruction at our headquarters in Soho Square.

As you see, our main task has been one of stimulating the interest of Colonial Governments in making their own educational films and assisting them to organize, staff and equip their film production units to meet their particular needs and above all at a cost they can afford. One by one the Governments have taken over the professional units we sent out, or established units round the people we trained, and it is gratifying to say that as a result of six years' work film making is now going ahead in no fewer than twenty-four colonial territories with an estimated total output of over two hundred reels a year.

Our task now is to do everything possible to raise the standard of the films made. Our advisory service on all technical matters relating to film scripts and equipment is freely available to all units. Progress reports from the units tell us what they are doing. Technical work in canalizing these territories' films is carried out by the Colonial Film Unit in London on a repayment basis.

Here I would like to say that whatever the Colonial Film Unit has achieved would have been impossible without the help and enthusiasm of a hard working

and loyal staff. I consider I have been extremely fortunate over the past twelve years in having the very able assistance and wise counsel of Mr. George Pearson who, with over forty years' experience in all branches of filmcraft, is without doubt the most respected film director in this country.

There can be no doubt that the cinema holds tremendous possibilities as an instrument for education and information on all matters affecting the daily lives of millions of people, and particularly those living in the vast inland regions of Africa where the expectation of life is grievously low and the struggle for existence intense. The demand for locally produced films is increasing rapidly and all the time fresh and inspiring subjects call aloud for films to be made. The people are keen and eager to see these films and visits by the touring cinema vans are great events.

It is usual for a trained commentator to speak the commentaries to the films through a microphone in the appropriate vernacular, introducing local references and idioms. The people come from miles around and crowd together in one dense solid mass to see the films. Audiences of three to four thousand are not uncommon. On one occasion I stood with a doctor friend of mine near the screen of one of the vans looking out over a sea of dark eager faces. We caught sight of an African's head thrown back and with the whites of his eyes and teeth showing up clearly in the light from the screen, he looked to be in a pretty bad way. The doctor and I fought our way to the unfortunate man only to find that he had somehow got his body turned away from the screen and was so tightly wedged in the crowd that he could not turn round again, and what we had seen were his frantic efforts as he tried to get what must have been an upside-down view of the screen.

On another occasion in the Gold Coast a cinema van arrived to give a show but the rain came down in torrents and prevented the show taking place. The villagers knew the van was due to proceed on its way the following day and so when the rain stopped at 4 a.m. the villagers, headed by their chief, woke the van crew and begged that the show might be given there and then, and of course it was.

*Here the Lecturer showed a film of a cinema van in action.*

Unfortunately at the present time there are far too few vans available and therefore the interval between visits by the vans may be anything from a few weeks to six months. Now that local film production is becoming well established, the exhibition side is developing rapidly, but instead of taking the cinema to the people by cinema vans the people must be encouraged to come to the cinema.

The day is not far distant when the illiterate peasant will be able to pay his few coppers to see a film show and, in return, receive not only education and moral teaching which he is so eager to have but in addition healthy entertainment and relaxation from weary toil which he so richly deserves. For this purpose a permanent type of open air cinema has been designed which can be constructed of local materials cheaply and is highly adaptable for use as a cultural centre for the village. Self-supported and controlled by the people themselves

through their own Native Administration they can become the very heart of village life.

*Here the Lecturer showed a film illustrating this type of cinema.*

The type of film to be shown in these static cinemas is most important. Research into audience reaction has shown that it would be a grave error to allow film production to follow the pattern of the majority of films made for Western audiences, which more often than not falsify the facts of life to such an extent as to make the films highly misleading and even dangerous when shown to unsophisticated audiences. African folk-lore is a gold mine for the script writer of entertainment films, but as with educational films they must be made for the people with the people and by the people. Those of us who are privileged to be engaged in the development of this work realize how great our responsibilities are.

In all backward areas and particularly in Africa the cinema has a tremendous opportunity to operate in a virgin field and exert its most powerful influence for good in guiding millions of illiterate people in their search for knowledge and enlightenment.

*The Lecturer concluded by showing some films made by Colonial units.*

## DISCUSSION

MR. J. PITCHER: Could the lecturer tell me if the films taken in one Colony were shown in others?

THE LECTURER: There is an arrangement for inter-territorial exchange of films. But there again we find that the more familiar the background is, the greater is the impact, except with certain films. It is rather interesting that a film made in Nigeria on smallpox, which is perhaps one of the best films that have been made by any unit connected with the Colonial Film Unit, has been highly successful in Tanganyika.

I think some of the major problems can be tackled in that way, but for the most part, the local background to the film is necessary in getting over and communicating ideas or a message.

MR. EWART E. WADE: Do these people finance their own films, or are they financed by the Colonial Film Unit?

THE LECTURER: The finances of the Colonial Film Unit are derived from Colonial Development and Welfare Funds, and our terms of reference are to use the money for developing film production. Once we have shown the way, we expect the local governments to take over full responsibility for both administration and finance, and to organize their own film units entirely by themselves. That is what twenty-four territories who have their own film production units are doing to-day.

SIR SELWYN SELWYN-CLARKE, K.B.E., C.M.G. (Chairman, Commonwealth Committee): In his fascinating talk Mr. Sellers emphasized the importance of local colour. I wonder whether he could tell us whether any developments are being made in colour or perhaps in the three dimensional process?

THE LECTURER: The three dimensional process, I am afraid, is quite new, and we have not had opportunities of investigating it very far.

The question of colour is a most interesting one, because we have little information with regard to what the true reaction of illiterate audiences might be to colour films. My experience at a very early stage was that the people, having seen a colour film, would not refer to it as a colour film, but rather in terms of 'the film where the sun was shining brightly'. It is a fact that in the African vernaculars the words for colours are restricted to black, white and red. There may be something in the fact that illiterate audiences anyway are less receptive to colour than is normal. The subject is attracting quite a lot of attention but we still do not know the answer. At the present time, they show no preference for colour over black and white, and as black and white is infinitely cheaper we are, for the time being, concentrating on that.

MR. A. W. HODGKINSON: The lecturer referred to illiterate audiences, and I think he also means by that the inability to read the screen, that is to understand the picture. I take it that he does not find any correlation between inability to read and write, and inability to read what the picture says on the screen?

THE LECTURER: I deliberately used the word 'illiterate', because we find that if audiences are literate, then they have had access to books, and they can read pictures. Reading the screen, that is, the grammar of the screen, is in rather a different category, and we find that we have to lead them by easy stages. Many of the modern conventions, which our chairman uses quite frequently, are of little use in our type of film making—various conventions, such as the 'mix', the 'wipe', the 'dolly shot', and so on.

When I referred to 'illiterates', I meant the people who have had no access to pictures, either still or moving.

MR. A. MAXWELL-CAPLIN: I am concerned with the proposal with regard to cinemas in various parts of the Colonies. If the appreciation of the film becomes really great, is there not a serious danger of the worst kind of commercial films infiltrating and dominating the minds of the people who see them? If the lecturer thinks that possible, I should like to know if he has any ideas about avoiding that danger.

THE LECTURER: The answer to that is, of course, the local production of entertainment films which, to my mind, is very necessary. My experience is that, if you showed in Africa, say, a picture with an African background and a picture with a western background, the people would nearly always prefer the film with the African background, particularly if it were in their own traditional story telling idiom. There is a great danger at the present time, in commercial cinemas in the Colonies, with the type of film that is now being shown; the Censorship Boards have a very difficult job in deciding what should be shown and what should not. The interpretation that is put on certain films—I am quite sure the director responsible for them would have the shock of his life if he knew—is really fantastic.

The answer is that the films must be made in the idiom of the people, both for entertainment and education.

MR. M. W. COX: Mr. Sellers made a very fascinating point about people not being able to recognize themselves, but recognizing other people. Can that be tied up at all with the scarcity of mirrors in the places in question?

THE LECTURER: Yes, to a certain extent, although they do see the reflection of themselves in water. But I think it is common to all people really, because I remember when I first saw myself on the screen I had almost passed across the screen before I realized it was myself. I think that is the experience of most people, in the same way that you do not easily recognize your voice when you hear it being played back after

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it has been recorded. I first heard my voice after a recorded broadcast, and I thought I sounded like a Lancashire cab driver! I was very ashamed.

MR. E. CONNOR: I wonder what effect television will have on all this? I am not in any way trying to minimize the importance of what has been done; it has been remarkable, wonderful indeed; but what is going to happen to films?

THE LECTURER: I think much the same as what will happen in this country, with regard to television on the one hand and films on the other. It must be remembered, however, that before television can be effective, receivers have to be obtained, and they, at the moment, are very expensive. It is the same even with straightforward broadcasting; it is all very well to have a broadcasting station, but that in itself is not sufficient; you must have efficient receivers before the people can listen to the broadcast.

The same applies to television. I do not think there will, for many years to come, be great competition between films and television.

THE CHAIRMAN: I hate to cut this short, because I am perfectly certain that you have all been as fascinated as I have been by Mr. Sellers' really admirable and, if I may say so, far too modest, talk. I have not been so interested, speaking for myself, and for all of you, I think, for a very long time. I always remember an old lady once saying to me that she did not see the good of the Ten Commandments, because they did not say what you should do, but only put ideas in your head. I think we can safely compare Mr. Sellers to the Ten Commandments in that respect because he has put more ideas in my head than anyone has for a very long time, and I am sure I am voicing all your opinions, when I say, 'thank you very much'; I cannot say how happy I have been to have the privilege of being in the chair at Mr. Sellers' meeting.

*The vote of thanks to the Lecturer was carried with acclamation.*

SIR SELWYN SELWYN-CLARKE: Before you go home, I should like to ask you to join with me in expressing our great thanks to Mr. Asquith for coming here this afternoon and presiding over this very fascinating address.

Mr. Asquith is an extremely busy person. He is a Governor of the British Film Institute. He is a very distinguished director of a large number of films. I can only remember a few of them, but I expect a number of you may have seen *Tell England*, *We Dive at Dawn*, *Pygmalion*, and *The Way to the Stars*.

I wish to thank him very much for sparing the time to come here to-day.

*The vote of thanks to the Chairman was carried with acclamation, and the meeting then ended.*

# THE FUTURE DEVELOPMENT OF THE CARGO LINER

*Thomas Gray Memorial Trust Prize Essay by*

**J. W. KILLAN**

*First Officer of the R.M.S. Ascania*

In an era of almost unceasing advance in rocket and jet propulsion, in atomic power, and in the application of electronic devices to a widely varied assortment of functions—to mention but a few of the works of this age—it is difficult to prevent one's imagination from running riot when considering ships of the future. Progress in design and operation is inevitable, and we may be forgiven the 'Jules Vernesian' trend of our thoughts in the light of past experience, in which the so-called impossible has become reality, and the fantastic has become commonplace. Aiding and abetting us in our perusal are the fascinating products, in the form of writings, strip-cartoons, radio-serials and films, of the more fertile brains of the 'futurists', who use 'space-ships' to Mars and gigantic undersea craft for ocean transport just as readily as our forefathers used the horse, in the never-ending search for improved transport of men and materials. But, looking at the more practical side, it seems very unlikely that anything wholly revolutionary will occur in the development of our shipbuilding, whilst it is equally safe for us to predict that new ideas will continue to be incorporated in its products, to the common advantage of owners and operators.

Ships are necessarily closely allied with rivers, wharves and docks, and in the planning and designing of future craft it must always be borne in mind that these establishments, many of centuries' standing, have their own special limitations, since, for obvious reasons, advance and modernization have not been at the same rate as that in ship design. To design, build and launch a completely new type of ship is usually within the means of the average ship-owner, and the time to do such work can be estimated in months. To change a harbour, wharf or dock system to accommodate it, however, is a vastly different proposition and, almost always, a lengthy and costly one. Furthermore it is unfortunately just as necessary now as ever it was, in designing our ships, to consider the threat of war and the ready convertibility of such craft as are planned to their vitally important and essential work, should the threat materialize. We have suffered the ravages of two major wars in the past thirty years, seemingly to little advantage, for, despite the disastrous losses, wholesale destruction and terrible tragedies following in their wakes, we have by no means dispelled the fear of further and even more awesome conflict. The influence of the situation cannot be denied, is apparent to owner, designer and builder alike, and will, therefore, be reflected in future development of all ships—not least in the cargo liner.

In a very diverse assortment of services operated and maintained by the Merchant Navy, the contribution made by the cargo liners must be well to the fore. These ships provide the means for a reasonably fast delivery of freight on regular scheduled sailings, which is of paramount importance to importers and exporters of manufactured goods, preserving an exchange of trade so essential to our national economic well-being. To the industrialist and manufacturer it is of equal importance that a steady and reliable flow of their raw materials also be maintained. The cargo liner fulfils these requirements at rates which compare favourably with those of the express liners and, of course, their express charges. But possibly the greatest advantage is that the cargo liner invariably serves the secondary and the subsidiary ports as well as the major ones, thus eliminating the additional handling charges involved and the inland transport costs. Then also, the cargo liner, fitted and equipped to carry limited numbers of passengers, frequently offers invaluable transport service to places other than the main ports, which is a great asset to travellers concerned, if only in the saving of time and trouble. We therefore see in this type of ship a utility craft of great potential, which, whilst lacking the luxurious elegance of its sister passenger liners, offers a superior service to shippers of freight, as opposed to its sister tramp steamers, and withal fulfils the requirements and duties of both types of vessel. It is not unlikely that rapidly expanding air services will gradually infiltrate into ocean passenger services, nor can it be discounted that certain special express requirements of freight may also be handled by air transport in the future, but the bulk carrier and cargo liner of the merchant fleet will always be an essential in our transport system, and hence the improvements and developments in their design will assuredly continue.

It is not easy to generalize when contemplating the trends of future design and construction of ships, since nothing can, nor will, change the nature of the oceans upon which they ply. Similarly it is impossible to alter suddenly the ways and requirements of a special trade and the accommodating features of the ships employed in it. Cargo liners sailing on the North Atlantic routes will of necessity always be of a stouter and more rugged construction than those designed for Eastern and Colonial trading. Vessels engaged in trade to West African and Indian coast ports will incorporate all the facilities for open anchorage and surf-boat working. The modern Colonial ports favour crane working for the discharge and loading of their cargoes, as opposed to the almost fanatical adherence to winch and gantry working, so common in United States and Canadian ports. These points and all others of similar type will not be caught up in a sudden sweeping tide of changes and what we like to call 'modernization', but rather will they gradually be improved upon, within their own sphere, through the experience gained as time goes on, by the various port and ship operators concerned. Features for common improvement and development are legion, even so.

The attention of designers for some time past has been centred largely on new types of metals and alloys with a view to reducing overall weight of construction, whilst maintaining adequate strength. The main object in this is directly



concerned with the weight-power-speed ratio, on the broad principle that a reduction in weight will mean a reduction in power to achieve a given speed. As, however, the lighter metals were mainly intended for superstructure, their use affects another important consideration—stability. If the top-weight of a vessel is reduced, it is in most instances, and particularly in the cargo liner type of ship, more difficult to obtain a good condition of stability. The ideal aimed at is for an easy motion, neither too stiff nor too tender, for the best carriage and out-turn of freight. To counteract this, one idea likely to find favour is the incorporating of deck ballast tanks in designs to supplement the decrease in top weight. This system of deck ballast tanks also greatly aids cargo distribution and stability when loading for a number of different ports.

A further economic factor, not to be overlooked, is that, consequent upon lighter metal construction, the draught of a vessel can be greatly reduced, and as port dues, pilotage and such charges are often based on draught, a considerable saving in operating costs might well be achieved.

A world shortage of steel, probably not so much an actual shortage as a priority allocation to the armament industry once again, has accelerated experiments with lighter metals for ships' construction, and sufficient faith has been gained to use them in modern vessels, the results so far, at any rate, seemingly justifying the confidence placed in them. Further developments in these materials will doubtless extend their use in shipbuilding.

Non-corrosive metals of the popularly called 'stainless-steel' type have long commanded the interest of shipbuilders and owners. Their production, however, has always been far too expensive a process for them to be used economically in shipbuilding generally. The advantages gained do not justify the additional costs in anything but small units, such as lifeboats and, of course, furnishings of certain types. In this field of research, therefore, the accent has been rather on the preservation and treatment of metals to withstand exposure, and much progress has been made. In the future, as for many years past, mild steel will be the main material unit in hull construction.

It must have appeared to world travellers in the past, and for that matter, to-day, that there was an inexhaustible supply and variety of timber, and yet a shortage now exists. Much of the blame for this can be laid, once again, on the ravages of war and the neglect thereby occasioned. But to a great extent also, the experts advise that this has been brought about by the rape and savaging of the world's timber lands, the ruthless cutting-down and the complete lack of thought and control of this natural resource. The fine timbers and special woods used in the shipbuilding industry have become limited in supply and, in common with other manufacturers requiring them, the shipbuilder has been compelled to find substitutes.

International health organizations and port medical authorities the world over are becoming more and more intent on 'clean' ships; clean in the sense of being free of vermin of all descriptions, and in many countries it is now demanded that all new tonnage must incorporate what has become known as 'rat-proof' construction. This, in turn, is eliminating timber, which heretofore



has been no deterrent to the rodent pest. Furthermore the present-day ship-owner is very rightly much more fire-conscious than his predecessor, and is determined that his craft shall be as nearly fire-proof as it is possible to build them. This, too, tends to exclude timber, always a fire-hazard, always so vulnerable.

The whole effect of this will be seen in future ships with an increased use being made of the many types of compressed woods, hardboards and veneers, and even the introduction of plastic materials which are being found to be extraordinarily and effectively adaptable. Compositions of various types have steadily usurped the familiar and much-prized wooden decks of the past, and will doubtless continue to invade this territory. The exclusive use of them in new tonnage is almost a certainty.

In determining the dimensions of a cargo liner, the controlling features will always be the particular trade upon which the vessel is to be employed, since these ships are usually required and designed for a specific service. It is not possible, therefore, to forecast, more than in a very general way, the size of ship in terms of length and breadth we can expect to see in future tonnage. There is, however, a noticeable partiality towards the 'five hundred foot' ship for North Atlantic, South American and Colonial trading. A margin of fifty feet either side of this line will encompass the majority of cargo liners for all but the more unusual services. Future vessels will, in the main, be built with more beam than has been customary, for improved stability and in the tendency towards shallower draught.

Efficient and fast loading and discharging of cargo liners—the keynote of their successful maintenance of sailings and schedules—require ample hatchways. The five- and six-hatch vessels have proved successful enough in the past and little change in this design will be seen. Two 'tween-decks throughout and an extra deck amidships have more than satisfied the average service and are also a feature which is unlikely to be altered. Colonial traders always demand fullest possible refrigeration space and in all cargo liners a generous allowance of such stowage will be available. Light metal sheathing, with its many advantages and more hygienic qualities, will, when available, definitely take the place of wood, in the construction of insulated holds and 'tween-decks.

When contemplating possible tonnages which will be aimed at and achieved in future ships, it is anticipated that the range will not vary greatly beyond the region of ten to eleven thousand tons for the gross tonnage of cargo liners. This figure, having regard to the clever art of the present-day shipbuilder and designer in excluding upper deck spaces above the tonnage deck, will, it is felt sure, provide a comfortable margin. Tonnage openings, as in the past, will continue to be used to advantage. The benefits gained, of course, are perceptible in payment of dues which are also often levied on gross tonnage figures.

The most popular demand in deadweight tonnage is still for the ten thousand tons vessel, and the success generally enjoyed by cargo liners of this category is likely to influence owners in the building of future tonnage. This size of craft, again developed more particularly during the last war, seems to provide a reasonable balance between port and sea time, allowing what is generally taken to be

an average cargo liner speed, that is, fifteen knots, putting it on a sound basis economically. It provides amply for all normal requirements and, at the same time, holds that little essential reserve, allowing the best service to be offered in circumstances such as those produced by seasonal fluctuations in freights.

A cargo capacity of somewhere in the region of five hundred thousand cubic feet, will, it is thought, become more or less a standard and possibly some two hundred thousand cubic feet of this will be provided for refrigerated cargo. Recent developments in a new type of refrigeration, however, may in the near future cause the owner to provide interchangeable refrigerated space throughout the whole vessel, since it is possible that, at small extra cost during the building, this facility can be included. It would be a definite advantage in operation in many of the cargo liner trades.

Tonnage and capacity figures, generally, must always be closely allied with and determined by the requirements of the particular trade and service in which a vessel is engaged. It is impracticable, therefore, to predict them in future vessels for any but specified services. It is probable, however, that the aim will be towards a reduction in gross tonnage without loss of capacity or deadweight tonnage, which of course are the main earning coefficients of a cargo liner.

The world has always looked up to and admired the British shipbuilder, and it is an industry in which he certainly has been a leader and pioneer. But, as in all fields, the master has had some very apt and progressive pupils, and the development and growth of the industry has been quite remarkable in several other countries. From them, and not unexpectedly so, have come the main departures from orthodox design and style. The French, in the past, could always be relied upon to create a sensation, with innovations like, for example, the introduction of the square funnel. To-day the Americans are inclining to usurp that position. The late world war co-ordinated efforts with a marked and lasting effect on shipbuilding generally, and the products of the minds of allied experts, grouped in a common cause, created certain standards, from which it is not expected that large deviations will be made. Primarily, and after considerable thought and experiment, a hull design was agreed, and has become a pattern to which architects and builders noticeably and closely adhere. Small modifications will certainly be made in future ships, but the 'Liberty' hull, as it is known, will in its basic form undoubtedly continue to influence ship-planners. The austerities of its war-time appearance, however, will certainly disappear in the return of and development of the more raked stem, the flared bow, the raised deck of the forecastle and the less severe stern, to mention but a few points where a facial change may be expected. The benefits of sheer for strength and 'tumble home', in a form very much modified from the original, for buoyancy, will also, it is felt, re-assert themselves to the common satisfaction of builder and seafarer. To the former they have a definite practical value, to the latter, ever conscious of the graceful lines of his craft, they do much to enhance them.

The age-old controversy on the relative merits of the cruiser and the counter stern still goes on, and is likely to do so amongst seafarers and shipbuilders the

world over till the end of time. From the point of view of utilizing to best advantage the space within the length, the cruiser stern must decidedly take preference, but to the sailor, thinking also of the sea-kindliness of his craft, the value of the counter stern will prevail. This latter point is particularly applicable to vessels whose business takes them into those vast oceans of heavy lumbering swells where the unpleasant reactions of cruiser-sterned vessels are especially noticeable in any following weather. It is predicted with strong conviction that there will be once again a very definite swing towards the counter stern, even though this well might be of a compromise design.

The business of the shipbuilder is to assemble the various components of a designed vessel in conformity with the rules and regulations laid down by the several registration and classification societies, consistent with the lightest possible weight, strength, rigidity and seaworthiness. Certain scantlings have been determined, agreed and must be adhered to in all vessels built. In studying the development of water-borne craft, once the stage of the boat which was hollowed-out of the solid timber had been passed, the 'skeleton' system of backbone and ribs emerged and has persisted. Modifications have constantly been introduced, but in the main the original idea is maintained. There has come to be therefore an almost general acceptance of the transverse frame system of shipbuilding, and radical deviations from it, in cargo liners of the future, are not very likely to be seen. It has stood the test of time, is practical in both its application and adaptability, and the fundamentals of its principles are certain to remain. Many systems of construction have been invented and introduced but, with one possible exception, the Isherwood system of longitudinal framing now extensively used in tanker construction, all have had but a short life, and allegiance to the transverse frame system has proved unshakeable. It is possible, in fact it is highly probable, that deeper and more numerous web-frames will be employed, as also will be various combinations of transverse and longitudinal framing, in the unceasing endeavours of the builder to achieve the strongest possible craft. Due also to lessons learnt in the last war, there will assuredly be a greater tendency towards increased internal subdivision than has been the practice heretofore. Effective damage control can only be applied to the cargo liner, as in any other ship, when that vessel is constructed with sufficient bulkheads to reduce the former vast areas of hold space, which, it has been realized, contributed largely to the loss of many fine ships. A happy medium will doubtless be struck, wherein this added margin of safety can be incorporated without seriously interfering with the capacity and stowage of the freight, which, of course, is the cargo liner's main source of income. Whilst it is earnestly hoped that we shall never again have to guard against the hazards of warfare, the possibilities, risk and consequences of collision can never entirely be eliminated.

The cellular double-bottom, providing fresh water, ballast water and fuel oil storage space, has not been bettered and will continue as the foundation upon which our ships of the future will be built. The leaning towards deep tanks, however, is marked and will, it is felt certain, continue to gain favour with owners, designers and builders. We may expect, as standard practice in our cargo

liners of to-morrow, at least two deep tanks and the tendency is to locate them close on each side of the amidships sections. It is realized that, except for a slight loss of hatch-square area due to wash-plates and division plates, their incorporation in the building does little to impede general functioning and at the same time a great asset is gained. Deep tanks are invaluable aids for procuring good trim and important in determining a safe stability factor, especially in the light ship condition. A possible development in connection with these tanks, and double-bottom tanks generally, as used in the merchant ship of the future, will be the provision of a unit, such as the compressed air system, for the more rapid discharge of the water ballast content.

It has been mentioned previously, when discussing the advent of lighter metal and alloy construction which is being introduced into superstructure, that deck ballast tanks are another innovation of which we shall see more in new tonnage. One method of combining the hatch-coaming-continuous-deck structure longitudinals with a deck ballast tank arrangement has been tried and found successful. Again, the spaces between hatches have been utilized with great effect, and developments in this important new feature will certainly be seen. Loss of top-weight in modern cargo liners, which all too frequently in the past have had excessively high metacentric heights in the light ship condition, must definitely be counter-balanced.

In the steady advance in all ship design a few half-hearted attempts have been made to dispense entirely with masts and funnels. These efforts have met with poor reception from all connected with the industry and will, it is hoped, not be pursued to any great extent in future development, least of all in the cargo liner. The apparent redundancy of the large funnel was countered immediately by the utilizing of such space, admittedly not really essential, for many other useful and practical purposes. In present-day vessels it is known to accommodate the master, the radio-room or the officers' wardroom, in fact it, never is nor will be wasted. The life of the masts has hung on an even more slender thread since it had to be agreed that King posts or, as they are more commonly known, Sampson posts, achieved the same purpose, with often enough a greater degree of efficiency.

A standard pattern has been moulded, which, with pleasing and inevitable variations, will distinguish our future ships. The one mast, the rather smaller streamlined funnel, both raked, the abundant Sampson posts with their attendant derricks, the high curved superstructure of the navigating bridge and amidships deckhouses, tapering away gracefully, and stepping down to the main deck level of the stern, all will be the hall-mark of the general outline of the cargo liner of the future.

Since its introduction into shipbuilding and the enormous expansion of its use, particularly during the war years, welding has played an increasingly important part in present-day practice. Improved processes have eradicated so many of the failings of its original form that modern methods of welding leave little to be desired. The simplicity of its use and the appreciably increased speed of production due to its application to shipbuilding, cannot

be denied; nor can its proved strength and efficiency. In that stubborn, unrelenting strength, however, probably lies its greatest weakness; it lacks the 'give', the elasticity which, all seafarers universally agree, is essential to good performance of a ship in a seaway. The sailor has an increased affection for the rivet, being mindful of the uncomfortably large number of all-welded craft which have cracked in varying degrees, not a few of which, of course, also foundered. Thus it is noticeable that a midway course is being adopted in a combined operation of welding and riveting which will distinguish our future cargo liners, with their welded plates and riveted frames.

The evolution and development of the aeroplane, in which sphere it doubtless had its greatest value, must bear the main weight of the responsibility for the coming of streamlining. In aircraft the increased efficiency and effect due to its application in design can be appreciated, as also, indeed, in any form of craft or vehicle built essentially for high speeds. The fashion grew and all forms of transport, not excluding ships, were subjected to streamline in their design, to a greater or lesser degree. The practical asset of it in cargo liners, however, is debateable. The considerations which warrant its use in aircraft, for example, do not apply to the comparatively much slower speeds of ships and so it is very doubtful whether excessive use of it, in future ships, will be justified. Streamlining, however, will play its part in the advanced design of the ships of to-morrow, with its particularly pleasing effects on appearance. The designer, builder, owner and seafarer are not so deeply absorbed in the practical side, as not to want a good-looking craft when nothing vital is sacrificed to achieve this. The streamlined funnel and navigating bridge screen will both have a definite place in modern design. The former, in varying shapes, is gradually solving the important problem of the dispersal of smoke, soot and fumes, and will assuredly progress to achieve its purpose. The latter is a long-needed aid to the comfort of those carrying out the ever most important duty of lookout. At last it is being realized, seemingly, that a better job is done by people working under comfortable conditions than those called upon to perform the same task on the exposed bridges of the past. The streamlined bridge will be improved upon and definitely takes its place as a feature of to-morrow's ships, even though our stalwart forefathers of the open bridges, particularly on the Western Ocean, will deplore its advent. In the passing of the canvas screen and 'dodger', they will see the decline of the present-day sailor, being quite unconvinced that the diverted airstream of the modern bridge enables a lookout to carry out his duties with infinitely more efficiency than his predecessor of the tear-streaming eyes, virtually blinded by wind and rain.

Cargo working equipment will, naturally, always command more than a little of the architect's attention, with refinements for special trades and a very genuinely progressive aim to achieve greater economy and efficiency. Despite a gallant attempt to reinstate the steam winch in modern dress with helical gearing in oil-bath immersion, the speedier, more powerful electric winch will continue to gain favour. The designers of the deck crane also still make valiant efforts to gain more support for its increased use, but with no more success than

a composite arrangement in a few isolated instances. The trend and pattern in this direction for coming ships is quite clear: the universal adoption of the electric winch, with its time and labour-saving built-in drum, for the topping and trimming of derricks, and the already quite familiar remote control deck-house, for its operator.

Patent hatch covers have continued to be improved in design, and an ever-increasing variety is being offered to the shipowner. The advantages gained by their use are many, and it is certain that, in the very near future, they will have become a standard and undisputed fitting of the cargo liner, particularly since speed of operation is an essential in this type of craft. Roller beams with their time-saving efficiency will also, in ever-improved designs, take their place in all future ships. It is confidently forecast, too, that light metal or alloy hatch covers will entirely displace the cumbersome wooden hatch boards of to-day, where such openings as 'tween-decks require covers.

In no department of the shipbuilding industry can we anticipate drastic changes and developments more than in that very important branch, the engineering section, and the development of the power units of our future ships is enthusiastically awaited.

This period will certainly go down in history as the Atomic Age and the evolution of the atomic-powered craft is even at this moment under way. A major naval power has built experimental submarines driven by atomic power and, seemingly, is so gratified by results as to engine a sizeable warship with a similar unit. It is a far cry, however, from the costly harnessing of atomic power in naval vessels to an economic proposition which could be applied generally to merchant shipping. Governments are blessed with apparently unlimited resources and need be at no pains to show dividends, while the merchant shipowner has a much more restricted capital and the shareholders of his company demand just return for their investment. Atomic energy will be geared and applied to ship propulsion eventually, but not in the immediate future.

Meanwhile, the steam turbine, with oil-fired boilers, and the motor ship continue in steady favour with the shipowner and are constantly being improved and modified toward greater efficiency. Progress in design and improved efficiency in ships' diesel engines, together with greater reliability, have considerably enhanced their popularity, but maintenance, replacement and running-repair costs are still somewhat exorbitant, and fail to offset the otherwise low costs of operation. The steam turbine still holds first place economically, functions more reliably and provides speeds, if necessary, not yet achieved by diesel engines.

The attention of the shipping world, however, is being drawn very forcibly towards what possibly is the propulsion unit of the cargo liner of the future—the gas turbine engine. Though still in the experimental stages, at least one shipping company has sufficient faith to install this power plant in a large vessel, now building, and the results of operation will doubtless be watched with keen interest. The development of this type of engine is optimistically forecast, and its installation in merchant ships of to-morrow is confidently predicted. The initial costs, at present, are very high, but will no doubt settle at a much more



reasonable level once this type of engine proves its many and great advantages. Results of experiments, conducted over a long period, have so far proved excellent economies in engine repairs and overhaul, the bills for these having been halved. Operating costs have been considerably lowered; to mention but one item, the extremely small consumption of lubricating oil is a very appreciable reduction of what is a surprisingly large bill in the more common engine-room of present-day vessels.

General satisfaction has been expressed everywhere at the performance of the gas turbine, and its application to the cargo liner fleet of the future will, it is thought, be the most definite and revolutionary development of the industry.

Undoubtedly one of the most controversial factors facing the shipowner and designer to-day, in formulating plans for new ships, is that of determining the speed at which such vessels will be operated. It is not merely a question of providing a fast service, but one of deciding a suitable speed which, taking into account port time of loading and discharging, will enable the service to be run economically and, of course, at a profit. It is unfortunate that yet another more serious element has crept in to further increase the dilemma: the all-too-frequent labour disputes with their inevitable delays which have been prevalent both in shipping and stevedoring the world over. The results of each extensive hold-up, particularly in the Colonial trades, have decreased the incentive of the shipowner to build faster vessels. Ships in port do not make money; ships lying at anchorages awaiting loading or discharging do so at a loss; ships working under aggrieved labour and go-slow tactics rapidly disperse the profit margin of their operation. It is to be hoped that more satisfactory agreements will ensure, in the very near future, a squarer deal all round. This being attained, the economical and satisfactory speed to all concerned seems to be in the region of sixteen knots. Above this service speed, however, there is sure to be a much better reserve of speed than has been the practice in former times. The value of this is being more appreciated in the maintaining of regular scheduled sailings—an important feature in their successful operation.

When considering one of the most important items of the future ship, the housing of officers and crew, we see the ending of a not-too-serious feud, and the passing of a relic of bygone days. The theory generally accepted amongst seafarers, is that the deck crew were accommodated in the forecabin and the engine-room crew were in the stern parts—though it still went under the name of 'forecabin'—in order to avoid any conflict between these two well-known rivals. The modern age, however, relishes the value of, and develops team work to the full and it is realized to mutual advantage in every ship. Thus it is that the shipowner can plan his future cargo liner with all accommodation for passengers, if carried, officers and crew, in the amidships section of the vessel. The advantages are obvious; the additional comfort for all, the easier communication between the galley, dining-rooms and messrooms, the centralized working and better contact in every possible way, aid smoother and more efficient running. The shipowner has devoted much thought and attention to the accommodation of his officers in modern ships, which, once again, will lessen the work of designers, confined

only to refinements in future craft. A new type of sailor, it seems, is emerging, who will appreciate fully the single-berth cabins which will be installed in all ships in the years ahead. The high standard of passenger accommodation and amenities at present obtaining leaves little scope for improvement by the planners.

The development of life-saving appliances and equipment received its biggest impetus from the late world war, and here again, beyond modifications and small refinements, it is very unlikely that they will undergo any radical changes. A smaller number of greater capacity boats, which will all be motor-powered, hung in gravity quick-launching type of davits, each on its own individual power unit, will find favour with all discerning shipowners. Life-saving rafts of revolutionary design, self-inflating, unsinkable and providing almost complete protection, will be a standard feature of all ships.

In the matter of navigational equipment for the future cargo liner it is confidently predicted that gyro compasses with automatic steering, improving the efficiency of navigation and saving running costs in labour, fuel, time and general wear and tear, will be standard equipment. In this category also can be placed echo-sounding machines and the invaluable Radar. The extension of the 'Chains', and the proven efficiency and accuracy of the Decca navigator, will endear this wonderful device to owner and sailor alike. Far-reaching developments may be expected in radio beam navigation for both long and short range position-finding, and attendant upon this, the automatic receiving device will be perfected and adopted. Seafarers everywhere await the inventive mind which will produce an aid to navigation, the advent of which will entitle it to a reception not less than that accorded to Radar. Could it be a remote searchlight beam, diffused at a suitable distance from the operating vessels to avoid blinding, but disclosing the definite presence to each other, of ships in fog or poor visibility? Radar is doing invaluable service in reducing hazards of navigation in fog, but has not entirely eliminated them. A device, as proposed here, will further lighten this heavy burden of the mariner, and might be an aid to which we can look forward. The constant picture recorded by an infra-red camera might also be applied for safer navigation in indifferent visibility, to this same end.

The shipbuilding and shipping industry are not alone to-day in working under conditions of extremely high costs in both labour and materials. In the labour field, a post-war reaction towards higher wages can be partly laid to the blame of the Government, which, saddled with an astronomical debt, due to the last conflict, had, it is admitted, little option but to increase taxation. There also is, and very rightly it is felt, a great move towards a better standard of living for all. The tremendous burden of taxation weighs heavily on each one of us, and is equally important to the worker in the shipyards, the sailor at sea and the shipowner pursuing his business. Yet by tempering the more radical elements and striking a fair balance, it is confidently hoped that this handicap will be lessened. The industry has no desire to be subsidized nor to become yet another nationalized debit, but freer rein must be given to it, to indulge its business enterprisingly, effectively and progressively against growing world competition.



Once this freedom is gained, the policy of the shipowner is clear, and the general economy is more easily defined. As in the past, he will be anxious and ready to incorporate and develop improvements and ideas for the faster and more efficient working of his craft in port, the main aim being to reduce the time occupied in loading and discharging. This must, of necessity, be closely attuned with the simultaneous adoption of more time and labour-saving machinery by shore establishments. In time and under reasonable trade unionism, it will not be difficult—as it is at present—to convince the workers that labour-saving machinery does not, by any means, breed the ever-feared unemployment. A general speeding up of the turn-round of ships will reduce the port costs, and will eventually be reflected in reduced freights. This in turn will enable the prices of raw materials to be brought down, and as a final result, manufactured goods will become cheaper. The shipowner can, and, given the opportunity, will pioneer in this movement, and it is earnestly hoped that greater concessions, particularly in taxation, will be allowed him, in order that he can pursue it.

Another tremendous cost, with which the shipowner is burdened to-day, is that of oil fuel. Unrest in this industry, of an international nature, has given rise to a shortage, which, of course, has been the main reason of a steep increase in the price. With almost limitless world supplies, and many as yet untapped sources, the end of this obstacle is seen, and growing stocks will enable the oil companies to reduce prices eventually to the benefit of all, and not least the shipowner.

Good economy is based on fair prices, fair returns, and a good standard of business and living for all. A reasonable margin must be obtained to enable beneficial progress and development to be continued against a firm and stable background—a balanced budget. In comparison with other businesses, the shipowner does not get an enormous return for his very heavy investment, and his gamble most certainly is a far more desperate one.

It is not possible, when cargo liners are, and will be built to so many different sizes, to detail numerically the full complement of their crew. The main object in view must be to see that adequate personnel is attached to each department in the ship, to ensure efficient running, and at the same time to avoid any extravagant and expensive wastage of manpower. As it is anticipated that the majority of future cargo liners will be of what has been referred to, in a general way, as the '10,000 tons type', a scale of manning is suggested here as an example.

The vessel under the command of a captain should have four deck officers, the junior of these being considered essential as an assistant to the chief officer in his multitudinous duties, outside of a regular eight hours daily watchkeeping. Cargo liners carrying passengers are not considered good training ground for apprentices. Two radio officers will be required, as also will three petty officers, a boatswain, a carpenter, and a lamptrimmer, who in present-day ships is more correctly termed a storekeeper. To cover sensibly the bridge, lookout and general deck duties, a minimum of twelve able-bodied seamen will be required, together with three deck boys or ordinary seamen, carried mainly for training purposes.

The staff of the engine-room department will depend entirely on the type

of engines, a motorship requiring more officers and less ratings than, say, a turbine installation. Broadly speaking, however, there should be at least three qualified watch-keeping engineer officers, presided over by a chief engineer, and at least one assistant to the senior of these. A further experienced engineer is essential for service to equipment outside the engine room, and is generally called the deck engineer. The refrigeration plant calls for at least two qualified engineers. In future ships, electricians will be more in demand, with the increase of electrical auxiliaries, and a minimum of three will be required. Three greasers, one engine, one electrical and one refrigeration, and at least one fireman are necessary to each watch, making a total of twelve ratings in all. A donkeyman and a store-keeper will complete the staff. Though the present-day innovation of carrying sea-going engineer apprentices is considered a good one, cargo liners are not thought to be the right ships in which to train them.

The catering department, led by a chief steward and assisted by a second steward, will again largely depend on the size of the ship, and particularly on the number of passengers carried, since it is certain that every cargo liner of the future will carry some passengers. The all-electric galley, much mechanized too, is unlikely to be deposed from favour, and is comfortably manned by a chief cook, a second cook, who combines these duties with those of ship's baker, a third cook, and a galley boy. Once again depending entirely on the amount of passenger accommodation, a possible seven stewards will adequately suffice for all officer personnel and passengers; one is allotted to deck officers, two to engineer officers, and the remaining four to passengers.

Slight variations of these figures there may be, but the final complement of sixty officers and ratings will not be greatly reduced in the average future cargo liner without causing dissatisfaction, and consequently impairing the quality of the service.

When we think of the years ahead, and speculate in the realms of fantasy, we visualize super-craft of unorthodox design. Our minds conjure up high-speed vessels, usually of submarine type, radio and electronically controlled, freight carried in huge containers, cargo spaces a mass of tramways, turntables and mechanized hoisting and stowing devices, ship's side-doors with endless belts—such are the thoughts of the dreamer! Yet, in more stable moments, we know that progress will be steady, changes equally so, and that gradually our ships will absorb improvements and take on a new appearance. The atomic threat will bring about the fully enclosed bridge, stabilizers will definitely gain favour and be more widely fitted, constant temperature and humidity systems will replace the present system of hold ventilation—these and their like, will be the type of developments we can expect.

With growing enthusiasm the British shipbuilding industry moves towards an era when shortages, restrictions and controls no longer exist, and craftsmanship will again hold pride of place. It has done a truly magnificent job in ingenious improvisation, producing the best that could be done with what was available. It finds new life in contemplation of the years ahead, when, it is earnestly hoped, materials will be plentiful, and the moulding of them into fine craft will enable

it to display its skill and leadership. Then, once again, the competitive world markets can be entered with confidence, in the sure knowledge that what is being offered is of the best, and worthy of a top-ranking name in a great industry. The reflection of this new assurance will be in our ships, in the liners, the cargo liners and freighters, and the shipbuilder will be quick to realize that the best advertisement of his wares is there in the product of his yards, in those ships which, eventually, will traverse the trade routes of the world, and which, in fact, are his shop window.

Looking to the future, it is confidently expected that the artistry and pride of the shipbuilding industry will once again be evident in the launching of every ship, and particularly the cargo liners, for theirs is an increasingly more important role in the Merchant Navy of to-morrow.

## GENERAL NOTES

### FOOTBALL AND THE FINE ARTS

An announcement was published in the *Journal* on 5th September, 1952 (p. 735) of a competition sponsored by the Football Association as part of its ninetieth anniversary celebrations. Arrangements have now been made for 150 of the entries, all of which dealt with some aspect of the game of association football, to be shown in an exhibition first in London and then, under the auspices of the Arts Council, in a number of provincial towns. The exhibits have been specially selected for the purpose by the competition judges and will include oil paintings, sculptures, drawings, water-colours, etchings and lithographs. The London exhibition will open on Wednesday, 21st October, at Park Lane House, 45 Park Lane, W.1, where it will be shown until Saturday, 7th November, daily from 10 a.m. to 9 p.m.; Sundays, from 2 p.m. to 9 p.m. Admission will be 15.

### FREE EVENING LECTURES AT THE V. & A.

Arrangements have now been announced by the Victoria & Albert Museum for the first series of its 1953-54 season of free evening lectures. The lectures will be given each Wednesday at 6.15 p.m. from October 14th to December 16th, and the subjects will include 'Thomas Bewick', by Montague Weekley, Officer-in-Charge, Bethnal Green Museum (14th October); 'Design in Mediaeval Textiles', by John Beckwith, Assistant Keeper, Department of Textiles, Victoria & Albert Museum (18th November) and 'Prints as Social Commentary (Hogarth, Rowlandson and Cruickshank)' by James Laver, C.B.E., Keeper of the Department of Engraving, Illustration and Design, Victoria & Albert Museum (9th December).

No admission tickets are required for any of these lectures, and they will all be given in the Museum Lecture Theatre (entrance in Exhibition Road).

## OBITUARY

### MR. ERIC TUSSAUD-BIRT

We record with regret the death, on the 27th September, of Eric Charles Hugh Tussaud-Birt, at the age of 71. He was the last surviving great-grandson of Madame Tussaud, and a wax modeller and sculptor of repute. Among his works were a portrait of the late Sir Neville Chamberlain on the eve of the Munich conference, a plaque over British beds in Petrograd hospital in 1916, and a life-size figure of Robin Hood, which stands at Thoresby in Sherwood Forest. He was elected a Fellow of the Society in 1951.

## FROM THE JOURNAL OF 1853

VOLUME I. 14th October, 1853

## From Chemistry and Perfumery

The following extract is from an account by Professor Fehling of the composition of certain artificial essences.

'The various artificial extracts of fruit have been applied to the flavouring of an agreeable species of confectionary known as the "acidulated fruit drops". These have been denounced as poisonous by some persons, on the ground that fusel oil is known to produce deleterious effects; and as a natural consequence the confectionary referred to has been discarded. There is, however, no foundation for such statements or belief; and if the confectionary flavoured with these extracts has in any case produced injurious effects, it is undoubtedly to be referred to an injudicious consumption of it, and not to any inherent deleterious property.'

## Some Activities of Other Societies and Organizations

## MEETINGS

- MON. 19 OCT. Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. *Television (Discussion)*.  
Imperial Institute, S.W.7. 5.45 p.m. P. D. Mehta: *Off the Beaten Track: Journey into the Past—Ancient India*.  
TUES. 20 OCT. Civil Engineers, Institution of, Great George Street, S.W.1. 5.30 p.m. H. E. Hurst: *Measurement and Utilization of the Water Resources of the Nile Basin*.  
Industrial Transport Association, at the Royal Society of Arts, W.C.2. 6.30 p.m. Frank Fowler: *The Shape of Things to Come*.  
International Affairs, Royal Institute of, 10 St. James's Square, S.W.1. 1.30 p.m. Godfrey Lias: *Developments in the Satellite States in the Post-Stalin Era*.  
Refrigeration, Institute of, at the Institution of Mechanical Engineers, Storey's Gate, S.W.1. 5.30 p.m. H. Stafford Hatfield and L. A. Smith: *Insulation Testing*.  
Textile Institute, at 10 Blackfriars Street, Manchester, 3.7 p.m. P. Boutry: *Trends in the Spinning Industry in France*.  
At British Rayon and Synthetic Fibres Federation, 138 Piccadilly, W.1. 7 p.m. H. Wild: *An Architectural Approach to Design and Colour in Textiles*.  
WED. 21 OCT. Kinematograph Society, British, at the G.B. Theatre, Wardour Street, W.1. 7.15 p.m. R. J. Spottiswoode and F. A. Young: *Production Aspects of Stereoscopic, Cycloramic and other Wide Screen Systems*.  
Locomotive Engineers, Institution of, at the Institution of Mechanical Engineers, Storey's Gate, S.W.1. 5.30 p.m. W. Vandy: *Production of Steel Wagons*.  
Petroleum, Institute of, 26 Portland Place, W.1. 6 p.m. G. M. Lees: *Geological Adventures*.  
Victoria & Albert Museum, S.W.7. 6.15 p.m. Robert Charleston: *English 18th Century Glass*.  
THURS. 22 OCT. Road Transport Engineers, Institution of, at the Royal Society of Arts, W.C.2. 6.30 p.m. E. A. Stokes: *Filtration for Road Transport Vehicles*.  
FRI. 23 OCT. Photographic Society, Royal, 16 Princes Gate, S.W.7. 7 p.m. Peter Folds: *Creative Animation*.  
SAT. 24 OCT. Horniman Museum, Forest Hill, S.E.23. 3.30 p.m. F. M. Bailey: *Life in Tibet*.  
MON. 26 OCT. Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. *Long-playing Disc Records compared with Magnetic Tape for Sound Reproduction in the Home (Discussion)*.  
Imperial Institute, S.W.7. 5.45 p.m. Mrs. Bertild Bekker: *Off the Beaten Track: Through the Jungles of Malaya and Borneo*.  
TUES. 27 OCT. Civil Engineers, Institution of, Great George Street, S.W.1. 5.30 p.m. J. T. Williams: *Overhaul and Repair of Lock Gates in the Port of London*.

- International Affairs, Royal Institute of, 10 St. James's Square, S.W.1. 1.30 p.m. Theodor Borch: *Social and Economic Development in Norway*.  
Manchester Geographical Society, 16 St. Mary's Parsonage, Manchester, 3. 6.30 p.m. M. Winata: *New Zealand's Racial Problem*.  
At the Technical Institute, Fountain Street, Marley, Yorks. 7.30 p.m. G. Weston: *The British Standards Institution*.  
WED. 28 OCT. British Foundrymen, Institute of, at the Waldorf Hotel, W.C.2. 7.30 p.m. A. Emmerson: *Shell Moulding*.  
Kinematograph Society, British, at the G.B. Theatre, Wardour Street, W.1. 7.15 p.m. P. H. Dorte: *The Impact of the Coronation on the B.B.C. Television Film Unit*.  
Victoria & Albert Museum, S.W.7. 6.15 p.m. Francis Watson: *French and English Furniture and Decoration in the late 18th Century*.  
FRI. 30 OCT. Mechanical Engineers, Institution of, Storey's Gate, S.W.1. 5.30 p.m. D. F. Galloway: *Cutting Tool Nomenclature*.  
Photographic Society, Royal, 16 Princes Gate, S.W.7. 7 p.m. Marquis of Ely: *Personal Experiences with Colour Processes*.  
Textile Institute, at the Midland Hotel, Derby. 7 p.m. Sir Ernest Goodale: *Ancient and Modern Textile Production in London and the Home Counties*.  
SAT. 31 OCT. Horniman Museum, Forest Hill, S.E.23. 3.30 p.m. Prof. I. Schapera: *Bushman of the Kalahari Desert*.

## OTHER ACTIVITIES

- WED. 21 OCT. Building Centre, 26 Store Street, W.C.1. 12.45 p.m. Film Show: (i) *How Tree Roots can Damage Buildings*; (ii) *New Builders*; (iii) *Water Services*.  
WED. 21 OCT. TO 6 NOV. British Rayon Federation and Furnishing Fabric Federation, at Hamilton House, 138 Piccadilly, W.1. *Exhibition of Rayon*.  
WED. 28 OCT. Building Centre, 26 Store Street, W.C.1. 12.45 p.m. Film Show: (i) *Manufacture of Spun Iron Pipes*; (ii) *Manufacture of Stanton Concrete Products*; (iii) *Flexible Joints for Cast Iron Pipes*.  
NOW UNTIL THURS. 29 OCT. British Architects, Royal Institute of, 96 Portland Place, W.1. *Exhibition: Architectural Photography*.  
NOW UNTIL SAT. 14 NOV. Bethnal Green Museum, Cambridge Heath Road, E.2. Thomas Bewick Bicentenary Exhibition.  
NOW UNTIL JAN. 1954. Imperial Institute, South Kensington, S.W.7. *Exhibition: Loyal Addresses Presented to Her Majesty by the Colonial Peoples on the Occasion of Her Coronation*.  
NOW UNTIL SUN. 17 JAN. 1954. Science Museum, S.W.7. *Exhibition: Navigation To-day*.  
NOW UNTIL APR. 1954. Victoria & Albert Museum, S.W.7. *Exhibition: Bazaar Painting from Calcutta*.

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